

## PHYSICAL INTERVENTIONS

TABLE 5: PHYSICAL INTERVENTIONS			
Intervention	Benefit	Source	Approx. Cost/Unit
Cleaning ranging from conventional equipment and methods to industrial cleaning services	Reduce asthma	Eggleston 1999	\$200
Radiator shields, anti-scald devices, interior redesigns	Prevent burns	Quinlan 1996 Harper 1996	\$150-\$300
Mattress and pillow covers	Reduce asthma	Gotzsche 1998 Plaschke 1999	Free-\$200
Safety electrical plug shields	Prevent accidents	VanDenburg 1996 Baker 1989	\$5
Cabinet safety locks	Prevent accidental poisonings	Wiseman 1987 Dowd 1999	\$10-\$30
Improved security system and/or lighting	Prevent falls, improve security	Rigler 1999 Wilson 1998	Variable
Window safety bars	Prevent falls	Dowswell 1996	Free-\$60
Anti-skid surfaces or carpet mats	Prevent falls	Rigler 1999 Wilson 1998	\$10-\$100
Humidistats	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	\$50
Kitchen and bath exhaust fans wired to humidistat	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	\$100-\$500
Air-to-air heat exchangers	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	\$250
Air conditioning for humidity and temperature controls	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	\$300-\$500
Supplemental room/unit air cleaning devices	Reduce asthma	Kang 1989	\$200
Air cleaning devices with UV catalyst for VOC reduction and disinfection	Reduce asthma	Becher 1996 Harving 1991 Koren 1992	\$400
Repair of leaks within and into apartments	Reduce asthma	Kunzii 1999	\$50-\$500
Seal pipe chases	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	\$10-\$50
Specialized laundry services to reduce dust mites	Reduce asthma,	Gotzsche 1998 Plaschke 1999	\$50/month
Quarterly maintenance apartment cleaning	Reduce asthma	Lovik 1999 Lioy 1998	\$100
Integrated pest management	Reduce asthma	Brunekreef 1989 Dales 1991 Garrett 1998	Free-\$50/quarter
Supply antimicrobial gels, wipes, and sprays	Prevent infections	Paulson 1999 Butz 1990	\$50

Source: Harvard School of Public Health

- Baker MD, Chiaviello C. Household electrical injuries in children. Epidemiology and identification of avoidable hazards. *Am J Dis Child* 1989 Jan; 143(1):59-62
- Brunekreef, Dockery, Speizer, et al. House dampness and respiratory morbidity in children. *Am Rev Respir Dis* 1989 Nov; 140(5):1363-1367
- Butz AM, Laughon BE, Gullette DL, Larson EL. Alcohol-impregnated wipes as an alternative in hand hygiene. *Am J Infect Control* 1990 Apr; 18(2):70-76
- Campbell ME, Dwyer JJ, Goettler F, Ruf F, Bittiglio M. A program to reduce pesticide spraying in the indoor environment: evaluation of the 'Roach Coach' project. *Can J Public Health* 1999 Jul-Aug; 90(4):277-281
- Dales, Burnett, Zwanenburg. Adverse health effects among adults exposed to home dampness and molds. *Am Rev Respir Dis* 1991 Mar; 143(3):505-509
- Dowd MD. Childhood injury prevention at home and play. *Curr Opin Pediatr* 1999 Dec; 11(6):578-582
- Dowswell T, Towner EM, Simpson G, Jarvis SN. Preventing childhood unintentional injuries – what works? A literature review. *Inj Prev* 1996 Jun; 2(2):140-149
- Eggleston PA, Wood RA, Rand C, et al. Removal of cockroach allergen from inner-city homes. *J Allergy Clin Immunol* 1999 Oct; 104(4 Pt 1):842-846
- Garrett, Rayment, Hooper, et al. Indoor airborne fungal spores, house dampness and associations with environmental factors and respiratory health in children. *Clin Exp Allergy* 1998 Apr; 28(4):459-467
- Gotzsche, Hammarquist, Burr. House dust mite control measures in the management of asthma: meta-analysis. *BMJ* 1998 Oct 24; 317(7166):1105-1110
- Harper RD, Dickson WA. Domestic central heating radiators: a cause for concern in all age groups. *Burns* 1996 May; 22(3):217-220
- Harving, Dahl, Molhave. Lung function and biological reactivity in asthmatics during exposure to volatile organic compounds. *Am Rev Respir Dis* 1991; 143:751-754
- Kang, Jones, Johnson, Kang. Analysis of indoor environment and atopic allergy in urban populations with bronchial asthma. *Ann Allergy* 1989 Jan; 62(1):30-34
- Kogan M. Integrated pest management: historical perspectives and contemporary developments. *Annu Rev Entomol* 1998; 43:243-240
- Koren, Graham, Devlin. Exposure of humans to a volatile organic mixture. III. Inflammatory response. *Arch Environ Health* 1992 Jan/Feb; 47(1):39-44
- Kunzii, Ackermann-Liebrich, Brandii, et al. House dust mite avoidance for children of low income families. *Allergy Clin Immunol* 1999; 103:1069-1074
- Lioy PJ, Yiin LM, Adgate J, et al. The effectiveness of a home cleaning intervention strategy in reducing potential dust and lead exposures. *J Expo Anal Environ Epidemiol* 1998 Jan-Mar; 8(1):17-35
- Lovik, Gaardner, Mehl. Effect of two different types of vacuum cleaners on airborne Fel d 1 levels. *Ann Allergy Asthma Immunol* 1999; 82:307-310
- Paulson DS, Fendler EJ, Dolan MJ, Williams RA. A close look at alcohol gel as an antimicrobial sanitizing agent. *Am J Infect Control* 1999 Aug; 27(4):332-338
- Plaschke, Janson, Norman, et al. House dust avoidance for children with asthma in homes of low-income families. *Allergy Clin Immunol* 1999 Jun; 103:1069-1074
- Quinlan KP. Injury control in practice. Home radiator burns in inner-city children. *Arch Pediatr Adolesc Med* 1996 Sep; 150(9):954-957
- Rigler SK. Preventing falls in older adults. *Hosp Pract (Off Ed)* 1999 Aug 15; 34(8):117-120
- VanDenburg S, McCormick GM 2<sup>nd</sup>, Young DB. Investigation of deaths related to electrical injury. *South Med J* 1996 Sep; 89(9):869-872
- Wilson EB. Preventing patient falls. *AACN Clin Issues* 1998 Feb; 9(1):100-108
- Wiseman HM, Guest K, Murray VS, Volans GN. Accidental poisoning in childhood: a multicentre survey. 1. General epidemiology. *Hum Toxicol* 1987 Jul; 6(4):293-301